```
        10                  30                  50
GTGAGATGGTGCTTTCATGAATTCCCCCAACAAGAGCCAAGCTCTCCATCTAGTGGACAG
        70                  90                 110
GGAAGCTAGCAGCAAACCTTCCCTTCACTACGAAACTTCATTGCTTGGCCCAAAAGAGAG
       130                 150                 170
TTAATTCAATGTAGACATCTATGTAGGCAATTAAAAACCTATTGATGTATAAAACAGTTT
       190                 210                 230
GCATTCATGGAGGGCAACTAAATACATTCTAGGACTTTATAAAAGATCACTTTTTATTTA
       250                 270                 290
TGCACAGGGTGGAACAAGATGGATTATCAAGTGTCAAGTCCAATCTATGACATCAATTAT
                  M  D  Y  Q  V  S  S  P  I  Y  D  I  N  Y
       310                 330                 350
TATACATCGGAGCCCTGCCCAAAAATCAATGTGAAGCAAATCGCAGCCCGCCTCCTGCCT
Y  T  S  E  P  C  P  K  I  N  V  K  Q  I  A  A  R  L  L  P
       370                 390                 410
CCGCTCTACTCACTGGTGTTCATCTTTGGTTTTGTGGGCAACATGCTGGTCATCCTCATC
P  L  Y  S  L  V  F  I  F  G  F  V  G  N  M  L  V  I  L  I
       430                 450                 470
CTGATAAACTGCCAAAGGCTGGAGAGCATGACTGACATCTACCTGCTCAACCTGGCCATC
L  I  N  C  Q  R  L  E  S  M  T  D  I  Y  L  L  N  L  A  I
       490                 510                 530
TCTGACCTGTTTTTCCTTCTTACTGTCCCCTTCTGGGCTCACTATGCTGCCGCCCAGTGG
S  D  L  F  F  L  L  T  V  P  F  W  A  H  Y  A  A  A  Q  W
       550                 570                 590
GACTTTGGAAATACAATGTGTCAACTCTTGACAGGGCTCTATTTTATAGGCTTCTTCTCT
D  F  G  N  T  M  C  Q  L  L  T  G  L  Y  F  I  G  F  F  S
       610                 630                 650
GGAATCTTCTTCATCATCCTCCTGACAATCGATAGGTACCTGGCTATCGTCCATGCTGTG
G  I  F  F  I  I  L  L  T  I  D  R  Y  L  A  I  V  H  A  V
       670                 690                 710
TTTGCTTTAAAAGCCAGGACGGTCACCTTTGGGGTGGTGACAAGTGTGATCACTTGGGTG
F  A  L  K  A  R  T  V  T  F  G  V  V  T  S  V  I  T  W  V
       730                 750                 770
GTGGCTGTGTTTGCGTCTCTCCCAGGAATCATCTTTACCAGATCTCAAAAAGAAGGTCTT
V  A  V  F  A  S  L  P  G  I  I  F  T  R  S  Q  K  E  G  L
       790                 810                 830
CATTACACCTGCAGCTCTCATTTTCCATACAGTCAGTATCAATTCTGGAAGAATTTCCAG
H  Y  T  C  S  S  H  F  P  Y  S  Q  Y  Q  F  W  K  N  F  Q
       850                 870                 890
ACATTAAAGATAGTCATCTTGGGGCTGGTCCTGCCGCTGCTTGTCATGGTCATCTGCTAC
T  L  K  I  V  I  L  G  L  V  L  P  L  L  V  M  V  I  C  Y
       910                 930                 950
TCGGGAATCCTAAAAACTCTGCTTCGGTGTCGAAATGAGAAGAAGAGGCACAGGGCTGTG
S  G  I  L  K  T  L  L  R  C  R  N  E  K  K  R  H  R  A  V
```

FIG.1A

```
      970                 990                1010
AGGCTTATCTTCACCATCATGATTGTTTATTTTCTCTTCTGGGCTCCCTACAACATTGTC
R  L  I  F  T  I  M  I  V  Y  F  L  F  W  A  P  Y  N  I  V
      1030                1050               1070
CTTCTCCTGAACACCTTCCAGGAATTCTTTGGCCTGAATAATTGCAGTAGCTCTAACAGG
L  L  L  N  T  F  Q  E  F  F  G  L  N  N  C  S  S  S  N  R
      1090                1110               1130
TTGGACCAAGCTATGCAGGTGACAGAGACTCTTGGGATGACGCACTGCTGCATCAACCCC
L  D  Q  A  M  Q  V  T  E  T  L  G  M  T  H  C  C  I  N  P
      1150                1170               1190
ATCATCTATGCCTTTGTCGGGGAGAAGTTCAGAAACTACCTCTTAGTCTTCTTCCAAAAG
I  I  Y  A  F  V  G  E  K  F  R  N  Y  L  L  V  F  F  Q  K
      1210                1230               1250
CACATTGCCAAACGCTTCTGCAAATGCTGTTCTATTTTCCAGCAAGAGGCTCCCGAGCGA
H  I  A  K  R  F  C  K  C  C  S  I  F  Q  Q  E  A  P  E  R
      1270                1290               1310
GCAAGCTCAGTTTACACCCGATCCACTGGGGAGCAGGAAATATCTGTGGGCTTGTGACAC
A  S  S  V  Y  T  R  S  T  G  E  Q  E  I  S  V  G  L  *
      1330                1350               1370
GGACTCAAGTGGGCTGGTGACCCAGTCAGAGTTGTGCACATGGCTTAGTTTTCATACACA
      1390                1410
GCCTGGGCTGGGGGTGGGGTGGAAGAGGTCTTTT
```

FIG.1B


4 QVSSPIYDINYYTSEPCPKINVKQIAARLLPPLYSLVFIFGFVGNMLVIL 53
18 EEVTTFFDYDY..GAPCHKFDVKQIGAQLLPPLYSLVFIFGFVGNMLVVL 65
54 ILINCQRLESMTDIYLLNLAISDLFFLLTVPFWAHYAAAQWDFGNTMCQL 103
66 ILINCKKLKCLTDIYLLNLAISDLLFLITLPLWAHSAANEWVFGNAMCKL 115
104 LTGLYFIGFFSGIFFIILLTIDRYLAIVHAVFALKARTVTFGVVTSVITW 153
116 FTGLYHIGYFGGIFFIILLTIDRYLAIVHAVFALKARTVTFGVVTSVITW 165
154 VVAVFASLPGIIFTRSQKEGLHYTCSSHFPYSQYQFWKNFQTLKIVILGL 203
166 LVAVFASVPGIIFTKCQKEDSVYVCGPYFPRG....WNNFHTIMRNILGL 211
204 VLPLLVMVICYSGILKTLLRCRNEKKRHRAVRLIFTIMIVYFLFWAPYNI 253
212 VLPLLIMVICYSGILKTLLRCRNEKKRHRAVRVIFTIMIVYFLFWTPYNI 261
254 VLLLNTFQEFFGLNNCSSSNRLDQAMQVTETLGMTHCCINPIIYAFVGEK 303
262 VILLNTFQEFFGLSNCESTSQLDQATQVTETLGMTHCCINPIIYAFVGEK 311
304 FRNYLLVFFQKHIAKRFCKCCSIFQQEAPERASSVYTRS...TGEQEISV 350
312 FRSLFHIALGCRIA.PLQKPVCGGPGVRPGKNVKVTTQGLLDGRGKGKSI 360
351 G 351
361 G 361

FIG.2